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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,760	01/13/2003	Tetsujiro Kondo	450101-03158	3056

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EXAMINER	
DURNFORD GESZVAIN, DILLON	
ART UNIT	PAPER NUMBER
2622	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/009,760	KONDO ET AL.	
	Examiner	Art Unit	
	Dillon Durnford-Geszvain	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,9,10,14-16 and 19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,10,14-16 and 19* is/are rejected.

7)☒ Claim(s) *9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Claims **1-10, 14-16** and **19** are pending, claims **1, 14-16** and **19** are amended and claims **11-13, 17, 18** and **20-38** are cancelled.

Response to Arguments

2. Applicant's arguments with respect to claims **1** have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims **1-4, 10, 14-16** and **19** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,418,546 (Nakagakiuchi et al.) in view of US 5,517,242 (Yamada et al.) and US 2001/003078 (Ide et al.).

5. As to claim **1**, Nakagakiuchi et al. teaches an image pick-up apparatus for picking up an image of an object (see Fig. 13), the image pick-up apparatus comprising: an image pick-up unit 39 (see Fig. 13) having a light receiving surface configured to receive light from the object to carry out photo-electric conversion (this is inherent to CCDs), and adapted to output a pixel value obtained as the result of the photo-electric conversion (this is also inherent); an evaluator 43 configured to evaluate the pixel value; and a controller 45 configured to control, in pixel units (Column 14 lines 15-21),

exposure time with respect to the light receiving surface on the basis of the evaluation by the evaluator (Column 14 lines 15-21).

What Nakagakiuchi does not explicitly teach is a storage unit for stroing pixel values of plural pixels and exposure values of plural pixels; and a correcting unit for correcting pixel values stored in the storage unit on the basis of said exposure times.

However, Yamada et al. teaches a storage unit 4 (see Fig. 1) configured to store plural pixel values D1 and D2 output from tile image pick-up unit and the exposure times T1 and T2 of pixels corresponding to the plural pixel values; and a correcting unit 3 configured to correct the plural pixel values stored in the storage unit based on the exposure times stored in the storage unit (Column 7 lines 47-67 and Column 8 lines 45-53).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the correction technique of Yamada et al. as this would increase the dynamic range.

What neither Nakagakiuchi nor Yamada et al. explicitly teaches is a storage unit that stores pixel values and exposure times and the pixel values are all from the same frame or field, and the exposure time of a particular pixel may be different than an exposure time of another pixel.

However, Ide teaches a digital camera that has a CCD 18 (see Fig. 3) that exposes different pixels in the same frame for different periods of time (see Fig. 7 and [0044] to [0045]) for the purpose of correcting the pixel data and expanding the dynamic range.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the exposure and readout scheme of Ide et al. in the image pick-up unit as taught by Nakagakiuchi in view of Yamada as this would allow for a shorter total exposure time than what would be used by the combination of Nakagakiuchi and Yamada et al. and therefore would require less time between exposures.

Claim **14** is a method that corresponds to the apparatus of claim **1** and is therefore rejected on the same grounds as claim **1** but drawn to a method instead of an apparatus.

Claims **15** and **16** are programs that correspond to the apparatus of claim **1** and are therefore rejected on the same grounds as claim **1** but drawn to a program instead of an apparatus.

As to claim **2**, see the rejection of claim **1** and note that Nakagakiuchi et al. further teaches the image pick-up apparatus as set forth in claim **1**, wherein the evaluator evaluates whether or not the pixel value is value within a predetermined range (Fig. 18 and Column 13 lines 56-60); and wherein when the pixel value is not value within the predetermined range, the controller controls the exposure time with respect to the pixel of the light receiving surface corresponding to that pixel value so that the pixel value is caused to be value within the predetermined range (Column 14 lines 15-21).

As to claim **3**, see the rejection of claim **2** and note that Nakagakiuchi et al. further teaches the image pick-up apparatus as set forth in claim **2**, wherein the controller is operative so that when the pixel value is a predetermined value or more, the controller shortens the exposure time with respect to the pixel of the light receiving surface corresponding to that pixel value (Column 14 lines 3-21).

The Examiner believes that claim **4** could be interpreted in multiple ways. First, the pixels are all evaluated as a group to determine the average luminance of the pixels and if this average luminance is less than a predetermined value the exposure time is elongated for all pixels. Secondly, the pixels are evaluated individually and if the individual luminance is less than a predetermined value the exposure time for only that pixel is elongated.

In the first case, Nakagakiuchi et al. further teaches that if the value output by an adder is less than a predetermined amount the exposure time of the imager is elongated relative to a "normal" exposure time (Column 14 lines 22-27). This would be a 102(b) rejection.

In the alternative case, Nakagakiuchi et al. teaches evaluating the pixel luminance individually and if the luminance is too high shortening the exposure time (Column 14 lines 3-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have also elongated the exposure time of individual pixels if the luminance of that pixel is low as this would improve the dynamic range of the image pick-up apparatus.

As to claim **10**, see the rejection of claim **1** and note that Yamada et al. teaches displaying the corrected image (Column 8 lines 35-37).

As to claim **19**, Nakagakiuchi et al. teaches an image pick-up control apparatus (see Fig. 17) for controlling an image pick-up section (39 with 36, see Fig. 13) having a light receiving surface for receiving light from an object and adapted to output pixel values obtained as the result of the photo-electric conversion, the image pick-up control apparatus comprising: an evaluating section 43 for evaluating the pixel value (Column 13 lines 56-60); and a controller for outputting, to the image pick-up section, a control signal for controlling, in a predetermined surface unit, an exposure time with respect to the light receiving surface on the basis of evaluation result by the evaluating section (Column 14 lines 15-21).

What Nakagakiuchi does not explicitly teach is a storage unit for stroing pixel values of plural pixels and exposure values of plural pixels; and a correcting unit for correcting pixel values stored in the storage unit on the basis of said exposure times.

However, Yamada et al. teaches a storage unit 4 (see Fig. 1) configured to store plural pixel values D1 and D2 output from tile image pick-up unit and the exposure times T1 and T2 of pixels corresponding to the plural pixel values; and a correcting unit 3 configured to correct the plural pixel values stored in the storage unit based on the exposure times stored in the storage unit (Column 7 lines 47-67 and Column 8 lines 45-53).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the correction technique of Yamada et al. as this would increase the dynamic range.

What neither Nakagakiuchi nor Yamada et al. explicitly teaches is a storage unit that stores pixel values and exposure times and the pixel values are all from the same frame or field, and the exposure time of a particular pixel may be different than an exposure time of another pixel.

However, Ide teaches a digital camera that has a CCD 18 (see Fig. 3) that exposes different pixels in the same frame for different periods of time (see Fig. 7 and [0044] to [0045]) for the purpose of correcting the pixel data and expanding the dynamic range.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the exposure and readout scheme of Ide et al. in the image pick-up unit as taught by Nakagakiuchi in view of Yamada as this would allow for a shorter total exposure time than what would be used by the combination of Nakagakiuchi and Yamada et al. and therefore would require less time between exposures.

Allowable Subject Matter

6. Claim **9** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: see the previous Office Action for reasons for indicating allowable subject matter.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dillon Durnford-Geszvain whose telephone number is (571) 272-2829. The examiner can normally be reached on Monday through Friday 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dillon Durnford-Geszvain 9/13/2007

TUAN HO
PRIMARY EXAMINER